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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,140	09/26/2003	Michael B. Timmons	1153.066US2	8068

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EXAMINER

POPOVICS, ROBERT J

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 11/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.



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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
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EXAMINER

ART UNIT	PAPER
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20051101

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

Requirement for Information Under 37 CFR 1.105

See Attachment.

Requirement for Information

Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application.

In response to this requirement, please provide copies of each publication which any of the applicants authored or co-authored and which describe the disclosed subject matter of ***filtration systems employing or mentioning microbeads.***

In response to this requirement, please provide the title, citation and copy of each publication that is a source used for the description of the prior art in the disclosure. For each publication, please provide a concise explanation of that publication's contribution to the description of the prior art. Additionally, Applicant is required to disclose **the depth of the bed** in the system depicted in Figure One and described as "Prior Art." Additionally, Applicant is required to disclose **the diameters of the beads** in the system depicted in Figure One and described as "Prior Art." Additionally, Applicant is required to disclose **the density of the beads** in the system depicted in Figure One and described as "Prior Art."

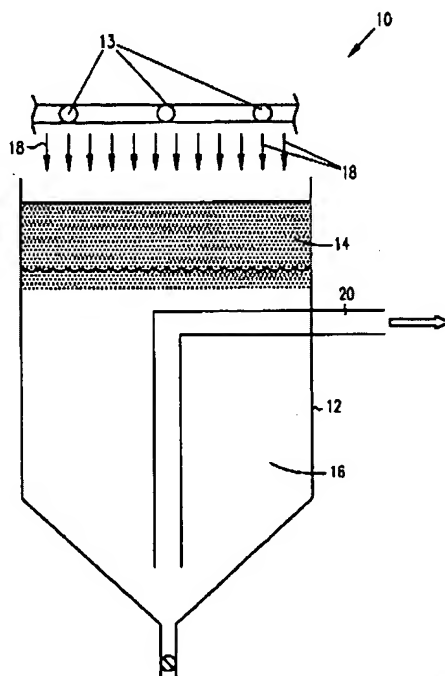


FIG. 1
(PRIOR ART)

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[0003] FIG. 1 illustrates one type of prior art filtration system 10 that may be used in a water recirculating system. The filtration system 10 includes a chamber 12 that contains microbeads 14. Microbeads 14 are sufficiently buoyant such that they float on top of filtered water 16 that collects in the bottom of chamber 12. The microbeads 14 on the bottom are partially submerged in filtered water 16 because they support the weight of the microbeads 14 located above them.

[0004] Contaminated water 18 is delivered to filtration system 10 from a number of potential sources, including fish raising tanks where the water supply is contaminated with unsatisfactorily high ammonia loads. Contaminated water 18 is supplied to chamber 12 from above microbeads 14 using any method that uniformly distributes contaminated water 18 over microbeads 14, such as nozzles 13 arranged in a uniform pattern. Gravity forces contaminated water 18 downward through microbeads 14 where it collects in the bottom of chamber 12. Contaminated water 18 applies a force to microbeads 14 as it impacts microbeads 14 such that contaminated water 18 submerges some additional microbeads 14. An exit pipe 20 circulates filtered water 16 back to the contaminated water source.

[0005] Microbeads 14 provide a substrate for bacterial growth during operation of filtration system 10. The bacteria on microbeads 14 utilize the ammonia and nitrite as nutrients for even further bacterial growth. The bacterial growth on microbeads 14 also tends to reduce the buoyancy of microbeads 14. Heterotropic bacteria living on the same beads utilize fine organic solids as nutrients for growth resulting in water polishing and general improvement in water quality.

[0006] One disadvantage of using a system 10 that includes microbeads 14 is that such systems are limited in size. In systems with large chambers, the strong buoyancy of microbeads 14 causes microbeads 14 to short circuit the flow of water through microbeads 14 in some areas of the chamber. Short circuiting the flow of water through microbeads 14 inhibits the ability of the bacteria on microbeads 14 to oxidize ammonia loads in the water passing through microbeads 14.

[0007] The size limitations associated with conventional filtration systems that include microbeads makes it necessary to utilize several chambers when oxidizing commercial ammonia loads (e.g., 9 kilograms TAN per day) that are generated from commercial fish feedings (e.g., 300 kilograms per day). The large number of chambers that are required to handle commercial ammonia loads adds unwanted expense to systems that include microbeads 14.

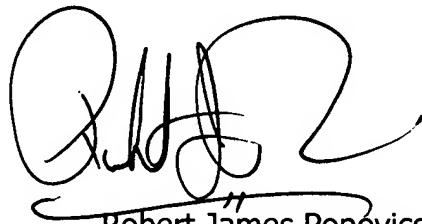
The fee and certification requirements of 37 CFR 1.97 are waived for those documents submitted in reply to this requirement. This waiver extends only to those documents within the scope of this requirement under 37 CFR 1.105 that are included in the applicant's first complete communication responding to this requirement. Any supplemental replies subsequent to the first communication responding to this requirement and any information disclosures beyond the scope of this requirement under 37 CFR 1.105 are subject to the fee and certification requirements of 37 CFR 1.97.

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The applicant is reminded that the reply to this requirement must be made with candor and good faith under 37 CFR 1.56. Where the applicant does not have or cannot readily obtain an item of required information, a statement that the item is unknown or cannot be readily obtained may be accepted as a complete reply to the requirement for that item.

This requirement is subject to the provisions of 37 CFR 1.134, 1.135 and 1.136 and has a shortened statutory period of TWO months. EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136(a).

Any inquiry concerning this communication should be directed to Robert J. Popovics at telephone number (571) 272-1164.

A handwritten signature in black ink, appearing to read 'R. J. Popovics', with a stylized flourish at the end.

Robert James Popovics
Primary Examiner
Art Unit 1724

November 2, 2005

A handwritten signature in black ink, appearing to read 'Gregory Mills', with a stylized flourish at the end.

GREGORY MILLS
QUALITY ASSURANCE SPECIALIST